United Nations E/CN.17/1999/13

Economic and Social Council

Distr.: General
5 February 1999

Original: English

Commission on Sustainable Development
Seventh session
19–30 April 1999

Letter dated 3 February 1999 from the Permanent Representative of Austria to the United Nations addressed to the Secretary-General

I have the honour to refer to an Expert Meeting on Renewable Energy which was hosted by the Austrian Government, the United Nations Development Programme and the European Commission and held at Vienna from 15 to 17 June 1998. The conclusions and recommendations of the Expert Meeting are summarized in the enclosed report (see annex).

I would highly appreciate it if you would arrange for the present letter and the enclosed report* to be circulated as a document of the Inter-sessional Working Group of the Commission on Sustainable Development and of the seventh session of the Commission under the respective and appropriate agenda items.

(*Signed*) Ernst **Sucharipa**
Ambassador
Permanent Representative of
Austria to the United Nations

* The report is circulated in the language of submission only.

99-03144 (E) 120299

Annex

CHAIR'S SUMMARY

EXPERT MEETING ON RENEWABLE ENERGY

Vienna, 15-17 June 1998

On 15-17 June 1998, an Expert Meeting on Renewable Energy, hosted by the Austrian Government, The United Nations Development Programme, and the European Commission (DG VIII) was held in Vienna. The meeting was convened and chaired by Ambassador Irene Freudenschuss-Reichl, Permanent Representative of Austria to the United Nations in Vienna. Dean Abrahamson, Professor emeritus, University of Minnesota, acted as Rapporteur. Some 150 experts from all regions of the globe and from relevant international organisations participated in the meeting.

1. Objectives

The Workshop objectives included:

- To follow-up on the recommendations of the 19th Special Session of the UN General Assembly (UNGASS) on energy (paras. 42 - 46 of the Programme for the Further Implementation of Agenda 21);

- To exchange views and elaborate recommendations related to the promotion of renewable energy as one component of an overall framework for a sustainable energy future as recommended by the 19th UNGASS;

- To provide substantive input into the deliberations of the open-ended intergovernmental group of experts on energy and sustainable development, created by the 19th UNGASS, which is to start its work at the 7th regular session of the Commission on Sustainable Development (CSD) in 1999 and will meet in conjunction with the meetings of the CSD in 2000 and in 2001;

- To identify areas where further research would be needed in order to enable appropriately informed action.

2. Background

Agenda 21 highlights the importance of energy: *Energy is essential to economic and social development and improved quality of life. Much of the world's energy, however, is currently produced and consumed in ways that could not be sustained if technology were to remain constant and if overall quantities were to increase substantially. The need to control atmosphere emissions of greenhouse and other gases and substances will increasingly need to be based on efficiency in energy production, transmission, distribution, and consumption, and on growing reliance on environmentally sound energy systems, particularly new and renewable sources of energy.*

Energy is of paramount importance in the quest for sustainable development in developing and industrialized countries. The availability of modern energy carriers is essential to reduction of poverty, and to social and economic development. Two billion people are cooking with traditional fuels. More than 1.5 billion people have no access to electricity. Hundreds of million women spend hours a day carrying fuel wood and water. Local issues – water, food, energy availability; health, housing and education provision; and potentially local and regional pollution - are the highest immediate priorities for most people.

Local, regional, and global environmental considerations are increasingly informing energy policy. Conventional energy supply is responsible for a large fraction of urban air pollution, acid precipitation, heavy metal contamination of air, water, and soils, and oil flows to oceans. Traditional household fuels are responsible for indoor air pollution and adverse health effects.

Limiting greenhouse-gas induced climate change could prove to be among the most serious environmental challenges facing industrial and non-industrial countries alike. The United Nations General Assembly established the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change (FCCC) in 1990. The FCCC was adopted in 1992. With the Kyoto Protocol, adopted at the Third Conference of the Parties in Kyoto, December 1997, the climate regime has developed a significant step further. The ultimate aim of the FCCC is to stabilize greenhouse gas concentrations at a level that would prevent dangerous anthropogenic interference with the climate system (a level which has still to be determined). This may require decarbonization of the world energy system by approximately a factor of ten.

3. Entry Points for Changing the World Energy System to meet Socio-economic and Environmental Concerns

Further restructuring of the global energy system is needed, taking into account realistic lead times and economics. The development and deployment of renewable energy sources is one essential course towards sustainable development. Renewable energy utilization is driven mainly by socio-economic

development concerns in developing countries and mainly by environmental concerns, primarily climate change, in industrial countries. In the economies in transition renewal of traditional energy systems with much more efficient technology is probably the highest priority.

The options for developing a new energy path are:

- More efficient use of energy and materials, in particular energy-intensive materials (dematerialization);
- Increasing the use of renewable sources of energy (decarbonization);
- More efficient production and use of fossil fuels; and,
- Fuel substitution to achieve decarbonization.

This Expert Meeting primarily addressed the renewable energy option. Renewable energy sources result in the emission of no, or little, carbon dioxide and hence their accelerated expansion is an important component of climate change mitigation. Additional benefits of renewable energy, benefits not currently reflected in national income accounts, include:

1) Social and economic development and employment opportunities;
2) Reduced conventional air pollution;
3) Increasing fuel supply diversity;
4) Locally appropriate and available energy resource use;
5) Increasing local energy supply security.

4. Renewable Energy

There is large technical and economic potential for raising energy efficiency and promoting renewable energy. Major studies have concluded that given adequate support, renewable energy technologies can meet much of the growing demand. By the middle of the 21st century, renewable energy sources could account for three-fifths of the world's electricity market and two-fifths of the market for fuels used directly.

Renewable energy technologies are maturing rapidly and some States are making significant efforts to increase renewable energy use.

Rapidly, a world market for renewable energy technologies is developing, a market which now has a volume of several billions of US dollars a year. At the end of 1997, the total installed wind capacity in the world amounted to 7030 MW, with the largest growth taking place in Europe. The annual worldwide installation rate is now more than 1600 MW/year. Costs continue to fall. In the area of photovoltaics (PV) the worldwide module shipments in 1997 increased to 125 MWp, compared to 90 MWp in 1996. Several multi-national companies have announced plans for investments in new manufacturing capacity, totally more than 250 MWp, to be realized in or before the year 2000.

The geothermal energy electricity production installed capacity has been 11.000

MWe and shall reach 16.000 MWe in 2000 and the thermal one has been 12.500 MWt to reach 20.000 MWt in 2000 which means annual increase of 1 000 and 1 500 MW /year.

5. Obstacles

Renewable energy characteristics are quite different from those of conventional energy, yet renewable energy technologies have been forced to compete within complex financial, regulatory, subsidy, and tax systems which evolved over a century to facilitate expansion of conventional energy sources. Established energy utilities often have monopolies on generation, transmission, distribution and sales . Renewable energy technologies have often been expected to deliver energy services with little attention paid to links with either the centralized or the traditional energy systems. The process of liberalisation now taking place in many countries needs to take account of access for renewables. There are price distortions adversely affecting renewables, and limited information is often available on the renewable resource base.

Market barriers and market failures have thwarted renewable energy technology development, such as:

- High capital costs;
- Incomplete information;
- High transaction costs;
- Deployment of new technology which involves risk;
- Excessive and costly regulations;
- Import duties;
- No credit is usually given for avoiding the environmental, health, and social external costs imposed by conventional energy sources;
- Refusal by utilities to purchase electricity at an adequate contractual price.

There are further obstacles, especially legal, administrative and institutional.

6. Recommendations

Energy services are essential for achieving the social, environmental, and economic objectives of sustainable development. In order to achieve these and other objectives agreed upon at a series of UN conferences, a number of measures are required.

Many obstacles currently encountered can be overcome by improvements in technology and through institutional changes provided that sufficient societal commitment to the transition to energy systems more supportive of sustainable development can be achieved. Mechanisms for renewable energy finance must recognize that renewable energy: is an interdependent part of the development

process; requires broad institutional groundwork; depends on a deliberate framework supporting market and investment growth; continues to need concessional finance, including grant support; seeks to mobilize available capital, including domestic savings in developing countries.

A strong individual governmental and international commitment is needed to underwrite and enhance national and regional programs for increasing the use of renewable energy technologies. The action-oriented World Solar Programme 1996 - 2005 is one reflection of such a commitment.

6.1. NATIONAL LEVEL

At the national level, renewable energy policy development would benefit from the following:

1. National and regional sustainable energy assessments, including environmental and social aspects of energy use, should be undertaken including establishment of goals and schedules for deployment of renewable energy supply and policies for realization of these goals and schedules.

2. The price of energy should reflect full costs, including environmental and health externality costs. This should be supported by reform of trade policies and agreements, wherever necessary.

3. A judicious mixture of markets, economic instruments, regulations and standards is likely to achieve the best results.

4. Public funding for key new renewable energy technologies could be very effective in supporting multiple energy policy goals. Such public funding should be reduced or phased out as the technologies mature, price distortions are reduced and an enabling environment for private funding is created. Joint ventures between public and private investors should be encouraged. Mobilization of private funds is a critical long-term need.

5. Tax exemption or reduction, and favorable depreciation schedules should be developed to encourage renewable energy production.Tax and tariff distortions that discourage renewable energies should be removed.

6. Renewable energy must be given equal access to transmission and distribution networks, especially for electricity, including through regulation.

7. Food, fiber, and biofuels policies should be coordinated as biofuels become increasingly important; increasingly compete for land and water with agriculture and conventional forest products sectors; and may threaten biodiversity. Natural resource policies management by local communities should be encouraged.

8. A major increase in support for renewable energy research and development, including technology transfer adapted to local circumstances as well as support for renewable energy technology diffusion is required, especially to rural areas of developing countries.

9. Temporary subsidies for the building of initial markets for new renewable energy and efficiency technologies to help bring costs of these new technologies down the learning curve.

10. Local entrepreneurs, who would add value to imported technologies, should be encouraged and supported.

11. The build-up of capacity for indigenous production, after-sales service, general maintenance of new renewable energy systems and intra-regional cooperation and trade should be encouraged.

12. Institutional frameworks which ensure that different policies and measures are coordinated to achieve consistency should be enhanced.

13. Education, awareness raising, promotion in the field of renewable energies should be strengthened at all levels.

14. Initiatives to jumpstart a dynamic bottom-to-top-process associating all relevant stakeholders should be promoted.

15. Implement disclosure and other mechanisms that ensure the customers the choice of renewable or sustainable energy sources.

6. 2. INTERNATIONAL LEVEL

At the international level there is need for various functions to be fulfilled, including:

1. Raising the awareness, from end-users to decision-makers at the highest levels, of opportunities for sustainable development utilizing renewable energy supply;

2. Providing mechanisms for the regular exchange of information on renewable energy development, and on policies and actions which are shown to be effective in overcoming the barriers to implementation of renewable energy and energy efficiency improvement at the national, sub-regional and regional levels;

3. Identifying the most pressing renewable energy research needs and sources of support for such research;

4. Encouraging or redirecting trade and investment flows preferentially into cleaner energy technologies and financing of appropriate renewable energy systems to serve remote rural areas;

5. Inviting the international financial institutions to devote more attention and resources to renewable energy issues and establishing regular reporting and monitoring mechanisms for the performance of such institutions.

6.3. ACTIVITIES THAT MIGHT BE USEFUL IN SUPPORTING THE CSD-9 PROCESS INCLUDE

Studies

A review should be undertaken to establish if and how the functions at the international level, identified above, can be done within the framework of existing institutions.

A comprehensive analysis should examine how intergovernmental agreements and institutions may best realize the potential benefits afforded by the transition to a more efficient and less carbonized energy systems. Such an analysis might include assessments of

- the potential land-use conflicts between production of food, conventional forest products, and biomass for energy;
- the environmental compatibility of the new energy developments;
- job creation potentials in the field of renewables;
- incentives for the promotion of renewable energy technologies and end-use efficiency;
- methodologies to internalize external costs and benefits of renewable energy supply and of increasing efficiency, and staged introduction of internalized values and would take into account the special needs of countries that are highly dependent on income generated from the production, processing, and export of fossil fuels; that have serious difficulties in switching to alternative sources of energy; or that are highly vulnerable to adverse effects of climate change, taking note that when rapid population growth and urbanization are occurring environmental issues are likely to rise up in the political agenda.

Other activities

Effective partnerships between governments at all levels, energy utilities, energy

industries, financial institutions, market intermediaries, consumers, and non-governmental organizations should be developed and encouraged. Fora to enhance such effective partnerships should be created,where they do not yet exist, or enhanced, as appropriate. Actions that are taken by the various stakeholders in the various sectors, such as industry, agriculture, transport, etc. already now should be promoted and publicized. The involvement of the local level is of paramount importance.